AVATION

The Oldest American Aeronautical Magazine

JULY 13, 1925

Issued Weekly

PRICE 10 CENTS



VOLUME XIX

SPECIAL FEATURES

SPAR DESIGN

THE WOODSON FOTO

NEW YORK-CHICAGO NIGHT AIR MAIL

GARDNER PUBLISHING CO., INC.
HIGHLAND, N. Y.

225 FOURTH AVENUE, NEW YORK
Emered as Second-Class Matther; New 22, 1950, at the Post Office at Highland, N. Y.

Ten Years of Packard Pioneering in Aircraft Motor Development 1915,1925

Dependability!



Perkert Nobil 1A-199 729 ftv., daplacement of 1900 ea. in. and develop NO B H. P. at 2000

WHAT better test of aircraft motor dependability can there be than nearly to double the world's record for a duration flight? A pair of Packard Model 1500 aircraft engines met and passed this test in the secret flight of the U.S. Navy searlane PN-9. The metyious mosted had stood at 14 hours, 53 minutes, 42 seconds. When dry tanks forced the PN-9 down, its Packard engines had driven at for 28 hours, 35 minutes, 27 seconds. Dependability of plane, pilots and nower plant made possible this new world's record.



PACKARD MOTOR CAR COMPANY

Ad The Mon Who Owns One

Elsa Francis Alemana, Plant Marian (ELIZAN)

July 13, 1925 RLY 13, 1925

CONTENTS

Thorat Adaban of Arrelane Sport Deopt 31 The Woodon Pots ... The Effects of Shartburg the Tree of Audich 36 Gorden Second Smolin-Intermediated Asiron and Elevelor 36 Arrests and Airway GARDNER PUBLISHING COMPANY, Inc., Publishers CONTRAC AND POTTORIAL ROOMS. 225 FOCUSIN AND R.C. NEW YORK. CARLY ACCRESS ASSOCRE

Publication Office Subscription proce-Fine delian per year. Counts, fire ... Inned every Meeday. Forms clear ion dear presents

Address Foreign of Address Prents aware for artis Bush numbers 25 cents Copporate 1985, by the Gerdary Post Office at Hipkinsk, N. F., under not of March

Extend as assent olar matter Nov. 22, 2007, at the

AIRPLANES FOR SALE

ST. LOUIS FLYING FIELD, ANGLUM, MO

Fire Writing to Adjustment, Firest Mention ATLATION

L. D. Gasserie L D Worns

AVIATION

Donne W. Melkows

HTY 15, 1925

A Significant Change

TWY HES the enconcernent was made of the recovered of a \$5,000 band to be deposited with the Air Serrace better a scribin print could had on Arr Service fields.

to property." This revocation is a recognition of the fact

Another Enoch Starts

WHATEVER may be the distant of communical seriation the data July 3, 1935, when the New York Change wield Air Nail started will much the humaner of the first been reflexed to make them add supporting or the schoolake

While we have sever considered that the possess of the Air Mail was dependent solidy on its energing expende, it appointing the availability of the fast service between courte should be not with every discussing argument that can be

ealy brings results from these who want to buy. Advertising creates markets, and sells to show who would not buy without encounters difficulties when traffic standation is needed. It

one and has received error publicity, but its advertisency or

Gatting Under Way LMOST years week for the most few years there have

A hora programments of compacted softens which were real commercial surface was to be storted. The extent obelong but it must be realized that a modern plane in expedie of ever 2,000 he, so that if one top a day each war were made hatwoon New York and Cheeses for 500 days during the year less than three places would be setselly worn out during the

to hand and ultimately the N A T, will profit by all the ideas encorporated in the new ships which are being tood and hy the Air Mad. It is to be loosed that the corretors of the N.A.T will also have enflowed visites and contrary to liganely whose printed and in week lower. There is also the question of multi-engened machines which are becoming so presciously

Is the resented the company has actually shood a solstanted order and should recent the congrutaletiess of the sed of the assumption empressive



WRIGHT WHIRLWIND ENGINES ARE GIVING THE U.S. NAVY HAS MADE THEM KNOWN THROUGHOUT THE WORLD

WILIGHT Whelward J-4, 200 H.P. Am-

The reasons for the choice of Wright able for mean-base delivery and reads

WINCHT ARRONAUTICAL CONTORATION WRIGHT WHIRLWIND J-4 AIR-COOLED ENGINE

3 her Kraing to Advertisors, Please Meanon, AVLATION

Direct Solution of Airplane Spar Design

Did the time, is the vertex's benefiting there has been as extensed until a develop on propositive wheeting out the plant was a straight until a develop on propositive wheeting out the plant was a straight until a develop of the de

of partic relatified, the remining dissuscess of the beat follow media, formal calculation are many pleantages: The first realization of the state of the state of which the state present a similar throughputs of which the state of the state of the state of the state of the state to the state of the pleantage of the state of the state of the state of the pleantage of the state of the line following unsuppose are such to adort that a subclear of the state of the state of the state of the state of the following unsuppose are such to adort that a subclear of the state of the 1. The general of new the state of the state of

are hold smarker divergiont in length.

2. The seminal values of the numbers bending seconds on the bests are all equal.

3. The self-body control by the wing term equals the Eale capping and for the beam, between power of support, or Consuler forth the report force (or many layer of a simple layer beginned fixed or contrastent with an enter mids. (Fig. 1). From summption 2: No. — No. — M.

And X = L/2Then $M_1 = wf = D_1$ from 1. Where w := Ranning beam load in Tr/inand $f = \sqrt{\frac{E\ell}{P}}$ F := Rad load

The free its region of the first Method $\frac{\partial \mathcal{L}}{\partial t} = \frac{\partial \mathcal{L}}{\partial t} = \frac{\partial \mathcal{L}}{\partial t} = -\partial \mathcal{L} = -\partial \mathcal{L}$ Therefore $\frac{\partial \mathcal{L}}{\partial t} = \frac{\partial \mathcal{L}}{\partial t} = -\partial \mathcal{L} = -\partial \mathcal{L}$ Therefore $\frac{\partial \mathcal{L}}{\partial t} = \frac{\partial \mathcal{L}}{\partial t} = -\partial \mathcal{L}$ $\frac{\partial \mathcal{L}}{\partial t} = \frac{\partial \mathcal{L}}{\partial t} = \frac{\partial \mathcal{L}}{\partial t} = -\partial \mathcal{L}$ $\frac{\partial \mathcal{L}}{\partial t} = \frac{\partial \mathcal{L}}{\partial t} =$

Since from managine 2 $(1 + \cos L/2)$ $L/j = \pi$ (1 - 9)Then M = wJ - (1 + 9)

Therefore N = wf, O = 0But size $R = 3360 \times L$, when the ordinates of the tap boding curve are assumed in very as a semi-ellipse and $L/R = 3332 \times L$, and $L/R = 32020 \times L$ Let y = L/LThen y = L/L $-3780 \times L$ $-3010 \times L$

X = 5011

This formula five the booten of the order wind for so tree designed under the above assumptions and mobile of designer to proceed of over wife the determination of titrace books and upper soon. Reference to assumption 1 above.

we therefore $L = \sqrt{\frac{BI}{r}}$ $\frac{BI}{r}$ $\frac{BI}{r}$

This equation gives the recovery moment of mortes to less the sursimate heading resuccess off equal with the location order stretc part gives by formula (4). After the end lot (1) has been found by the mach needed of its A very samp

Example

Rader to Fig. 1 S = 200 m, S = 140 M,

Then from [4] S = 160 MCC m S = 160 MCC M

Then from [4] S

Spar United 2 117 1 1183 Spar united 1181 1 1181 1 1181 Spar united 118

 $P/A = I_c = \frac{1000}{1000} = 1511 \text{ fs./m.}$ $W/X = A = \frac{15100}{1000} = 1511 \text{ fs./m.}$

39183 Modules of Registre of solid spor — 16,300 lb /m² 3040 AN 6 m — (1990) — 700s — 9007 lb /m² $f_1/4D$, $f_2 = \frac{6478}{8002} = .6169$ $200 \times 5.2255 \times 10$

Weight of sper = $\frac{300 \times 5,225 \times 30}{1758}$ = 152 b Whith of Sper = 5 = 15 in. Mannet of Receive of 465 = $\frac{15 \times 4.5}{12}$ = 11.361 at. To be removed by reading 11.301 $\pm 5,615$ = 3.675 at.

Minist to Books to Table 1997. The removed by reading 11391 $\frac{1}{2}$ 5815 = 3872 m. Let 2 = 3 + 0 table D = 3.9 Then 27/13 V = 3277 S = 3.9 be $1 = 3.9 \text{ S} = 3.9 \text{$

Acad 2 = 50000 m. A = 51010 m. A = 3146 m. A = 3146 m. Bobbles of Regulars = 7050 h./m. F = 1010 ft fts. All ft = 2010 (7000 - 5000) + 5000

6156 = f₁(all, f₁ = J94 If there are us places where the spac is left successed for fetting exteriment for an average length of 5 in the spar

 $Mr = \frac{1358}{808 \times 3799 \times 30} + \frac{1338}{30 \times 0 \times 0 \times 0 \times 33}$ satisfy persons.

 $I_{evin} = \frac{12}{3 \times 48} = 151875 \text{ m}^4$ $151876 - 8386 - 6376 \text{ m}^4$ 144 d - 235 h (once D - 235 H)Thus $6378 - 9462 h^4$ $b = 16000 \text{ m}^4$

x = 3000 to x = 3000 to x = 4000 to x = 31712 to 5 = 3041 7 for 5 = 304 7 for for 2020 to for for 2020 to for Modulos of benefit or = 6000 to for Modulos of benefit or = 6000 to for Modulos of benefit

All $f_{*} = \frac{600}{600} (6549 - 5500) + 5500 \cdots 6116 \text{ h}/\text{m}^{2}$ $f_{*}f_{*} \approx 1.62 \text{ f} = 1.002$ We = 24.62 (b) with the same amount of blocking as in the

Final Design
This year is not quite strong mouth soon the ratio of fill

elf. (a in graniser that some. Teletring this notice account been width as Fig. 2 shows that a super of 1 file which will be part storage energit. The weight of this spar will be 22.8 lb. at showing the energy of works or Fig. 260 to be ground by The modelation above that there is below to be ground by measuring the width beyond 1.5 in although the spar is moving the world by the property of the part is read the use of the normace beam. The proceeding investigation The proceding investigation has considered but one special

writed lies ultrang. The serving is material would war the more of the marrier from . In all the more of the marrier from . In all the more of the marrier from the prescription is maintained by the marrier from the marrier from

low. If honover a controlly invited one used in most for the well not be absoluted efficient. In some cases this delicative

M a yea respection in their and, alreaver, the pin may be so included their the such back, P, will problem a measure in the formation of the such as a such as the such as a such as the s



When the pin is not consistent out the recent of the leaser seed as some solidation may be readed the same of the feed and he has the feet feet of the feed and he has the feet with of T and outflet larger (100m T 50) and the confeient leasers because over her T in increases the leading interest and consequently the upper verificial wife of the confeient leasers from the consequently the sport verificial wife of the consequently the pine verificial wife of the consequently the pine of the feet and the feet of the consequent of the state of the content.

Biglious Fixed at least End-2 or More Baye for assumption 2 of the naturants Confederal Co

 $L_i = \pi \sqrt{\frac{g_T}{p_i}}$ (8)

If the large 1 and 2 be proportional approximately as a value of p_i and p_i determined, formula p_i below event if

may be asked for the entered key lengths, $\frac{EI}{S} = \frac{EI}{s} + \frac{V}{s} + \frac{V}{s} \frac{V}{s} \qquad (8)$ $S = 1.0312 \text{ e} \sqrt{-h} + \text{e} \sqrt{-h} \qquad (9)$ FI the discussions as found as not agree with the offences street borders quite checky it may be assuming by regard the administration and is nonlateauty approximate to obtained. We will be found first a slight oberge up key dimensions will have will be found first a slight oberge up key dimensions will have will be found first as object of the various and flants,

that ordinarily but one trial will suffice. The suitable for a malitiple key tens is not so useful as the shifting for the trial to composition of the trial trial

wer be of 1904 exportance since so was above to the ex-

Bown, L. Rrece

The Effects of Shielding the Tips of Airfails

All of the modified forms were slightly sufficients to the plane

Interconnected Aileron and Florator

I do not know who covered the recent Air Meet of the

fearly of later precessing further papers along these lines relative to the shares of stations and alon to the storesterior

with an Accountry 48 Test controld with 250 hp. Areadielling must have seen recurrent of a tayte has a save seen tendle to find expose who new it in the rece. Pechago I hal a narrow mone from collider with it has with the

The shore should ellipticates a patient taken out by Descon P Carleson of Depton, Ohn, the purpose of which is to center of presence also moves stightly forward to wholese to ac"Who's Who in American Aeronautics"

The month ultim of "Filest Was as Assessme Assessment" will be published Sept. 1, 2015. Below will be found may inoque; in that will appear in the interference whom . As invertices a capsord to a light or arrived process of a recolate man and are strong or assessment as a part of a reasonable of a set of the interpretate desirate for marries as the sent area. The best will recture the hospitalist of protection of the holidage process per features are recovered. The part of the holidage process per features are recovered. The part of the holidage point in part of the holidage process per features are recovered.

Charles Albert Yan Descu

Reduced Face of New Socie, ppc 1 1994 Thritisal Benger, Holiston, Loris des Sping 1995/2004 Friending Debries Enthéen Sping No. Lephon 1900 1992-1910 [Soud-RFC, No. 1991 April 1900 1992-1993] William N. Hensley, Ir.

William D. Tinton. TIPOU STAIR P. National Property of the Party of the Part 1930 Per number Charry Volto Chile Con Shed Bert Begger Mann,

William Elbrood Deberty Lartified Spencer

S. A. S. Dove Che S. S. Tayle Prints and Calvanty Cold. Dries. Ph. Rosel Agency and the Same England in Control Post Office Department Starts New Supros to Some a Business Day Between New York and Chicago

On July 1, the first empressive of the transmissional lander contlining are expelled to the proof excluse of serves, the Part Office Department resuggested a night ser the lower wints of each night mail place.

New York

Econic of an exercismally beave noti, organi by a large Duchaht Savier Time. The revalue schodule commerced pounds. It was delived two hours later by a second plane

agrees of the Cartes Coupany, fan over from Guides Olly as a Cartes Oriols ploted by Others. The following

"It mgot be ecerated well freeds and exposes to become a

At least 200,000 were laster enough to get within right of

Fekler Monrybuse from Detroit Your Marc's Acres

Curries, Joseph Boch to a Curries from Taylorfoot Labor. a Yaught from Dayton, regard for a fraworks duction: for sight firing. Art Seath with a Marin Domerred; a with William Arthur and the Spailing Coustration Con-

Chicago's first place took the ser of 7.58 p. m., Change time. It was printed by Sharky J Short a veteran of the here—the ship was reported as lunded in Circulard—and with the exceed. The thousands who enthered west of Mar-Postmudry Arthur C. Luedes, Paul Houleway, second

About at the last cornect before Pilot Short's departure

Coolidge, fisher of the President, who to etwo lessing after The other has wer for Mire Orace Grange, nations, and adstreet, WHT, from which the symmotors, including superiors When Print George Mover lopped off at \$40 Orleans trees it was named the name, everyth that the num had not, and the The transcontinental service, which dramatesed the measure "To last New york and dear Principles or many reason bushbook of miles of dearest and monature," said Colored

The Route

The scholate on the trenscretionald rante was loved on a continuence of prographical and weather conditions. compresse president figs at both ends of the roots, the two mucht from: Of necessity, therefore, the magnit of analytic und traffic become a major of recordary consideration. Yet, Renderes began preparations for the New York-Change-The prior departs seeing in the knowledge that what annexes the 754 pt. to Chicago. The field by has not left require



Unhading the first right air and to be received as New York from Choose. Pilot Paul (Duz) Collec at the right

For 66 ya. he man his way almost due westward below he assessment the Blaze Baker Mountains at New Yorks The payotion, though not more than 2,000 ft. lack, are shund without execution beauty tambered. Their confurnumber in such that more where there is no trather the owner 39 ms atteach from New Tripule to Bingtown, the air mail swrite has led out the emergency lander felds, each of which has a fire-sellion conditioner beacon, with routing bescope between to guade the flar on her course

Now Ridge Light New Yorks, Pa. manGTFRI, Fo.
Major Strict Fisher Regimes To.
VIRIAL To. (does forgood).
Limites Lasts, Colmolog. Fo.
Michigan Lasts, Colmolog. Fo.
Michigan Lasts.

Street, Pr. Street, Lat. Water, Pa. COASTILLY IN TO AND THE THE WHOLE PARTY IN NAMED IN desCONCRETATION For CLASSES Pr. Cover Drawnell Pr. CLASSES Pr. Cover Drawnell Biographics (ed.) "Negative Str. Pr. Edition (1998) For Principle Pr. School (1998) For School Pr. School (1998) For School Pr. School (1998) For School Pr.

Hardwood Lags Durking Pa-HARTWOOD Glin. Collect Link Corderd Skin Palitical Steps

well paid, have a kiple search of responsibility and above all are presented with that open at the service which secures

Hell, D. C. Smith, and H. A. Chandle-Fixing 1em Circlind to Change.-W D Willers, Art South R H. Ely, and J. E. Milers.

thou their miles in walth, if they sometany to park locations truly the from timber and now of norms. They may be



At the left over all the monthing trade formers to the raid. The horsess and allowmental most over on the horses

sures are dispatched in and out by mide-. Formal service series are headed to the main traken. Each energony field a measured by direct telephone wire with the recent or force One building red management from months "Bed" As they fly westward over the lighted servey prints earry

sufficient fort, all and water to take them to Belleforte, where stops at Breen, Ohm, for fact Endrand the process we

of the component for right lightny to the held billion enterly power electric are fixed lights with which the five major by to made as light as day. A narropoper may be read with east at three-question of a male wway yet the may at no good ex-

The Woodson Foto

Description of a New Commercial Three-Seater Machine Powered with a Salmon 79 Facine

The Woodness Engineering Co. of Styan, Olin, has recently

used of a and arrested to find any. This true construction

most afficient type as it similarites wrapping shock mod, breakage, etc., 550 x 125 mm, wheels are used.

The capital and to the Salmery type 28 200 kp mos cylin-





The MIT Aeronautical Course

The Pioneer American Course in Aeronautical Engineering The reed for speculated training for the new who are to of the work on the doors of indice-then we cred and Pro-

presented in the summer of 1905 at the recent of the War Assumptival contraction has because large class count to relation on the world. It is at reason engaged with the

Selector in the expossibility of drugging research from done next, no cone the students amortise in more that supprreductey, and for private parties. A wend transci of sense of the same described by the control of the same described by the same of Professor Marrier and William II Miller, then as a property of the control of the



The MLT, accounted staff and the graduating alon. The staff and contending poor left to right Matthew Bown, Nobels, LePays, Hand. Street, 19th studies).

demands and now includes in addition to Professor Warner, decreasester and completed, we notice the necutes of all Professor Charles P. Bennya, ninker design expent to the the the facer and moments arter on a model and also of the Barran of Automatan, who has been dryding by time between threst and tanger or model properties of any discover up to the New and the Indicate in second value and taking chance. there test and turning at may speed up to 2000 upon.

July 15, 2905

The graduates of the accumulated corne at M.I.T., topotor-

number of highly-qualified specialists, preferably men who The claims of the undergraduate are by no means shelped descriptive lectures on design, is offered to remore and well qualified readers, and is taken by from there's to prevent over

can you the repular obvious commention for service affold evidentics and taking the regular counce to grabily as a that is preterred, as the Naral Percent or statem at The work in accountfull engineering at the Reichtste ber

Gordon Rennett Results

Cont. Support Tex





The plate at the left shale a Broom place (Weight Windows) 300 kg, regard of the Prevision Name. The one at the right shale the Prevision Name States at Associate Class and the Communities Quelon Name Training States at Associate Class and the Communities Quelon

AIRPORTS AND AIRWAYS

Cleveland, Ohio

Oters L. Martin, recurrent of the N.A.A. for Objected specified of Goodead Chapter, her horn represed chap-

. The Can, otherwise, the Stort All Metel. Buff's glutter Bull Start here to that the world wan't forget that Bill, and not Bours, built that plane. If Mil doesn't get a pres-It is expected that a record of over 200,000 neces well be

The Stabore Avinters Co., P. H. Susborn, receiver in operating a Ryang field fracting on Enolid Ave. just went of Williamble. Chan and more said union ones of Circland Saskors has exected a their day hanger, a large lough pown, real-rooms, a filling station for ours and another for

E. F. Seckler has exected a DHS with DX5 operar which



Against Flort of the See Dreson Folloy Assembled Assembles

Swedish Airways Lloyd in ministring a schedule of three trips a week. Tun-

Polich company has recently regard necession from

tuvon Warner and Copenhagen, via Malme A ten year

July 13, 1985 well-known and mady editiontal Count. It has short

Earle Airport This agreet which is council and corrected by Dr. H. J.

Any arrest are release to the respect. Perchardle com-

Milwaukee, Wir.

After readure some of one Milangine representation for the right hand rafe of the mess. However, the surport question. is stall as the fire before the and that Councilion

stadest is a J1 Stewley with OX5 crops.

expectly and primal performance as the Connell. It is several by C in Northflin of Food do Las, Wet

and completed work on the new pental air fields at New Brusward, N. J.; Beliefests, Po., and Chroland, Ohio, are recover they up, by available, William & Anthur, sensed

Asriel Paymenter



Wickits's simpleme fuctories, the frendless Acr Plans Mile just netword from an orders trip including steps at Day Keiser, Beresper, Nober, Chengo, Milwanke, Detect, Greeken, Corrected and St. Louis. He invested to one of Garrier Piccory Green, the oldest and Import in the cognitive new has its bendestern in Walets. Paul Busses in old place and a three place yet. He will locate as the countries!

Pat Marchy, farmerly of Oklahoma City, is more w. Working to entablish an air line between this sity and Calver-

too, Ten. He retends ustaw Wighits, made acred-ner III, with his Trevel for plane which was delivered to bin,

UNITED STATES AIR FORCES

U. S. ARMY AIR SERVICE

Army Air Orders Enforcementations, A. S. Off. Rev. Corps, referred from date lorse, Kruss City, Leve Levy Roses, Omelo, William

Bulley Path, and deserting him to present to McCook Field. Savore Owen, Breakley, Albert Cluster Marrie, Deston. See Lite Darr Harres Allere, Sale Lake Cay, Fluor Joseph Ropers, pr. Quancy, Lorder Helph Tower, Scottle, George Al-Sec. Lts. Jenes Henry Collins, A.S., Akron, and Wayne Clarks Williams, Houston. Order 72, principal Sec. Lt. Louezed S. Fle, A. S. Res.

Crpt, Viscout B. Blace, A.S., A. S. Eup. Sch. to Com. First Lt Leich Wade, A.S., Belling Field, to Electrical Book, Sok., Ras. Admin., Cambridge, for instruction

THE TRAINING CAMPS Willbur Wright Field

From June 14 to 25, 1925, a Training Comp for Air Secthe Rearra Officers was held at Widow Wright Paid The bet Laux. Eichard M. Harriett, bet Lores, Walter E. Avery Groupe M McCable, 2nd Larm Solvey A. Stoot, Sqt 1st This camp is situation different from any came community

of owner then the same transport that is going to the secondar Lectures and practical despondentions in all

For example, instruction was given in the communications

See, Lt. Edward H. White, A.S., Kally Field, to Scott

examp regular, recreation offices, recreating officer and mak-

Lungley Field

Many mostly ago the scholate of Source Comps. for Lengter Field any compations the Advised amorning trial and Barre. The effects rememble for the armountation and Officers ordered to nettry data for the training period had

where the Monster and Morrows Inust: their Juneau duel

July 25, 2515

During the day in question, some therp-free Senerre Offi-By Tuesday average everyone had settled down to the arrious work of the evens, which speleded flyon for these

qualified as flying officers, while those softs, attack who were various amation relateds. These before based somewhat over an long and are given by Engelin Officers who have

guardly self auchied to exercise a new year delegied to hardle the work. A menu of high canlidy, and were than month questity, was constructly mustaced at a normal set Jahran by the number of "woods" that were called

In Texase, A.S., Capt. Shares & Cleared, H.C., Capt. Clar-ness F. Hebsteiter, O.D., Capt. Edward C. Block, A.S., 3rt. 52 William A. Herward, A.S., 1st. Lt. George C. McDonido. AS, by Lt John A. Knor, AS, by St. William J. McKers, and A. S. by Lt Ridge Q. Peng, Q-MC Capt Owner A. Bred, Washington, D. C.; Lit Li. Elymon.

ht Is Sarry F McCoffm, Philosoph, Po., 1st Lt Philip J. Newholt, Engelsie, Md.; Ist Lt. Charles C. Wood. Weyneshare Pt., 1 to De Beisch O Woods, Wodgesten, D. C. Jed M. Carl D. Beider, Cornected, Pts. 2nd Lt.

U. S. NAVAL AVIATION Navy to Map Alaska

For several results the Secretary of the Interior, though

The department, in connection with its revenients on all

The area to be severed by simplice photographs in approxymately 15,000 up no. The propert prescuts many lookheights of more than 4,800 ft. Furthermore, there is in this

veys detired from the mepping of this trust may furnish at so high a cost that their curvey is not warmened under

Etc. Alrin D. Chardler Act. U.S.S. Williamon to born. date Nav Acc Brs. Personals. East John W. King Sci. U.S.S. Milweslan, to brook data Lt. Center Frank C McCord det Off New Dec News fully, Nor. Air Sto., Pepasods.

East Googe A. Davissk det USS Cleveland to tour No New Ast Sen., remotion, Em Genze F Howland det USS Burry, to temp date

Lt. (27) Robert W. Bockins det, U.S.S. Tracy to temp show

\$4 (10) Dalob C, Allen del Nov. A. St., Assentia, to Nov.

Li Conde Paul M. Bates to ecalinar draw then forme



July 33, 1995

THE SCHOOL OF AVIATION
Value for polars. The planes of post serves. Altrinos and
figures. He in Eds.
17th SCHOOL OF SOULKE COLLING
LOUISING A SCHOOL. IT COLUMN AND REgisteries. H. E. THE SCHOOL OF AVIATION calcular war. As the life of a madem attolage can be considered to be 200,000 per, the above would led fire years—chappedox credes chined that no sender could make every unless it flow eight or more hows a day. Further-DAYTON, OHIO Supplies, Planaux, Strate and Fidd's Mile from Davice Smile, ADDROOM ARTENUE & SEPTET CO.

charture, then red two succtions will be upper-Her much tradic was them? What malesce did we get from our concerns? After all is said about the enterprising vision of piecesto in his transport, the net result will probably contri around these two feeters. We have some estimates that exiled for a complete rebuilding of a Service alon after every 500 fator hours and after every 100 he for sequent. These estresses also did not include the crubes. On the best rech of the ten Carrier Pigeons would have to be rebut mor every year. It will be one of the most page headed by men with asserant expension. is listed by apparential patriction, and are now and to a minor dearer, refleval conscientment Faces one will would the classes of the N.A.T.

As the most immortant fact that remains to be remed about account in their parcialities as profit resonably expectant to have some outled of Fewerer costs. Used recently these have been made

For one the select of the analytican wa have had assertations returned they stalky for "Bill" Calmore, has converted us. We use the word retreat because Gelimore will not even tell when or where he was been for "Wha's Wha in acter could reach no greater depths or heights. whishever way you are looking. After a long two Miller Field, States Island, the shore meglioued Fampy "goodss" lead goes Noblang in the ser or on the sex as kine to The "Wileye Blackments" server shill a coaper sub. But when it somes to use.

The wearant that came from tramper for

compe increasedly appeared but the dataff section The prospect of hours of clusty, emelors and techpleasest recorded. But here is when Cillmon's Coverno folded up the wheels and flow up the Names out the skyline of lower New York and deposited his tired cargo on the Hudson River at of transportation. After salarizing three times to the old contraction, we made a fees resolve to become a bassier for the amphibusas type of accords. And what was even more significant, the feminion once more, here's to the best little meney making,

PARTRIDGE, Inc.

Field Chicago, IX prote to France 400 5 William Area

YACKEY AIRCRAFT COMPANY
Fater on Free Press Company
Fater of Press Press Compan

MIDWEST ARREADS CORP.

CHRESTIL ABOUNT OF

THE SKYSYNE CORPORATION START & DAY RESIAL AUFESTICES OFFICE of my prime \$15°C Aug TEL Equal Side | Plaint is your | Log

HUNT AVIATION COMPANY

WORNEY BURNS-FLYERS

Arry Oct of Horiz

ESSINGTON SCHOOL OF AVIATION

PLYING BOATS, SEAPLANES, AND SPASES SECURITOR CAN FROM FUNDAMEN, PA

CAN YOU FLY

If you can't not much be health with on. We have an expension for you which you will alread to goes not. When the second content of the second content of

AMERICAN STREET OF THE STREET OF THE STREET STREET

PITCALEN AVIATION

COMMERCIAL

The Secret and Cost Diose New York City ORIGINATORS OF AIRPLANES OF ADVANCED DESIGN

Art Server, U. S. Army: Bassos of Associator, U. S. Navyi

CHAMPION

Gines Greater Power.

Dependability

ACCUES & POLLOCK LTD. OLDBURY REMINICHAM ENGLAND Specialists an auplage taking and take manipulation Support to the British Art Housey In all Drive

IONAS B. OGLAEND, INC.

GRASMERE STATENISLAND P.O. ROSEBANK, N. Y.

AUS-PER-ITE Commercial Done Acetate And Nitrate YELLOW Costructors to AS Streetles at Sin U.S. Constraint PERRY-AUSTEN MANUFACTURING CO



Aeronautical Supplies Airphae and Motor Parts, Aluminum Steel Terre Plates, Specification Tabane, Round and

Streamine Fabric Lines and Cotton Made-up Coven, Bolts, Screws, Wire, Cable, Brass Fittings. A Full Line of Exerctions for the Airplane and latest Flyins Equipment for the Pilot. West- for our Catalogue and Price Line

Johnson Airplane and Supply Co., Inc., Dayton, Ohio

WACO

Real performance in a three place thip with a stock OX-5 motor

Highest Speed Highest Craising Speed Laurent Landing Speed Rest Speed Rappe Oninkent Take Of Highest Apple of Climb Laurest in Price

Steel Empressege Olea Type Landing Geor From Air Redistor

THE ADVANCE AIRCRAFT COMPANY TROY ONIO

DOPES PIGMENTED DOPES

VARNISHES ENAMELS *TITANINE TITANINE, Inc.

UNION, UNION COUNTY, N. J. Contractor in U. S. Germannel

ANZANI Aircraft Motors



Other Types from 10 to 120 H.P. for commercial airplanes. Wallace Kellett Co., Inc. Philladalohi

Salesmen - ATTENTION - Aviators were company with mostle \$40000 patholic . The Absolute Adaptat Company, is division of the Absolute Standards of Liveau, is on factory production on a light memorial to the company of t

structured designs.

We are transfer by concerning with conferencemen with here were printed and man and the idea of firths, he becomes much need to be a supplementation of the contract of t ALEXANDER AIRCRAFT COMPANY Alexander Indones Bidg. R. 405, Secret, Colo. Auszarrien



High, Speed, Continuance, Load Have all World's Records

So ooo Radistors in working

tablissements T.A.M.BI.IN. 36. Bt Bourdon, NEUILLY-SUR-SKINE (Feenes)

AIRCRAFT SEXTANT PIONEER INSTRUMENT COMPANY MANUFACTOR PARTY PARTY BOTTON AND THE PROPERTY PARTY



MONUMENTAL AIRCRAFT CO. We have being a garby order which it many commands helding pairs for the critical field and GSCV modern signals with a real distinct of parts for the facility Manners for home a hard with the field parts of the facility Manners for home a hard with ever first parts over harden and produce model to the parts and one are foreign and to the facility of the modern field of the parts of the facility of the parts of the modern field of the parts of the parts of the facility of modern for the facility of the parts of the facility of the Andrews Account of Mannersonia Co., Andrews, Andrews NAME OF THE PARTY On order time with which we are represented so have special series. They will assure you.

- PETREL MODEL FIVE-Details on Models Four & Files globby parented on request HUFF DALAND AERO CORPORATION AND ALRO CO.

EVENYMING FOR A MICHAELY (C) prop. (

EXPLANDA ASPTANDO & NAPPLAND SE NAPPLAND SE PARTIE DE L'ANTINO DE Newton, alleging used and new \$500.00 in \$23330. Southern Special Providence 200.00 100.00 100.00 inches of \$500.00 inches 100.00 inches 100.0 Figs. Print, Day Peter, Street, Peter and Cores. SOUTHERN ASSWAYS INC

Mass. Institute of Technology

Comberdon, Man.

NAME AND ADDRESS OF THE PARTY O FOWARD P WARNER Curties Airplanes, Motors and Parts Considered in Association Facusarias You will fed that my roofs Commercial Operation of Aircraft

THE SUPER RHONE RADIAL ENGINE PARAGON PROPELLERS 120 H.P. at 1500 R.P.M., Aircrafed 229 pounds RETTER THAN EVER Paragon Engineers, Inc.

C & IRELAND CURTISS FLYING FIELD GARDEN CITY, N. Y. TIPS & SMITH

DEVENTORS OFFREE DAVIDAGE Parella Promes NAME . I H POLACIER, to WALL ST. MINE YOUR

Baltimore, Maryland FOR SALE No. Order Stein Bankers Edit Six SE Bankers Edit Stein BEIV SETT THOUSE A SMITH ... IS NOTTH THAT STREET

AIRCRAFT SERVICE DIRECTORY CONTINUED

AIRPLANE SALE Cortic JN -- Stanfords with SE CO and Stan Nation-Thomas See and CE and Colon States and Stan States dan place to due of Says and one US, UT and From Names.

2.8 and Sharfard Sandars and what Stream short cord door

named was sensing where then took propriet, US and

El codes made. Freez Science. Aircraft Supply Co., Kedory Whee, Minneapolis, Minn.

TOUNSON MOTOR PRODUCTS INC.

Special Prices On New Airplane Instruments DATE CANDIDATE FOR STORMS
DATE CANDIDATE OF STORMS
DECREASE DATE OF STORMS LINCOLN STANDARD AIRCRAFT CORP.

Special exhibition skip halfs by Cortes, original cost speed. Can get off and on small fields. With speed 50 PARTRIDGE, Inc. 3515 W. 83rd Pl. HASKELITE PLYWOOD

HASKELITE MANUFACTURING CO. CHICAGO ILLINOIS LUDINGTON EXHIBITION COMPANY

Seatmenten Victor Dellin-Agrid Photography

DECATUR AIRCRAFT COMPANY DECATER, BLINORS Pure for INSDANSE or Standard II Shaos

NEW SWALLOW for SALE We con building our even stays, so well self New Swal-low for \$3000 on field flowers. ALEXANDER AIRCOAT I CO.

ACROPLANT ROTTED from LEG II or Confirm Chart or chart or

SERVICE TO AIRMEN

THAT IS THE WHY OF THIS PACE, YOU WILL SEE FROM THIS AND RECENT BRUES OF AVIATION THAT THE

AIRCRAFT SERVICE DISCOTORY IS EXPANDING ALL THE TIME. THERE IS ONLY ONE DEASON FOR THIS...

IF YOU ARE EASIER TO OFFER SUCH SERVICE WRITE US FOR BATES FOR THIS SPACE

HANGARS AIRPLANE ASSEMBLY PLANTS SPALDING CONSTRUCTION COMPANY

DESIGNING ENGINEERS AND CONTRACTORS We are experienced regrescy on Aughter Manufacturing and Annahly Photo, Hosper, Hope and Fields. We are just completing from contents for the U. S. AIR MAIL SERVICE Three sachole the complete stations at Claraband, Ohre, Balbidosa

AVIATION

gives the greatest value of any neronautical publication-

94 Demestic \$5 Canada Ganteer Publishing Co., Inc.

New York CLASSIFIED ADVERTISING 25 Couls & copt, minimum charge \$5.00 periods in advances.

POURTH AVE., NEW YERE WANTED. Except House Suns reclars to been

FOR SALE: One band see Liberty 72 motor with spaces, no bours, and one precionly new 200 H P. Bountt motor, ESSE, are realer, with 600 H.F. Liberty mater. Skip and mater just been eventualed. New panel, sends, etc. All re-

POR SALE: Joney, Ent-class these coeffice. A berryer FOR SALE Template delivery 1 Lorenzy supplies, 1 Cortics same 5 1 Randord 5-1 K-5 motor. Attending prices

WANTED: Man capable of testing and educating Liberty choice with made. Tool but in excellent condition. Price

HARD USAGE AND STUNT FLYING IDEAL FOR SAFE PAST CROSS COUNTRY ALL YEAR The Steel St with first, sire where is 11 of less.

Finder white tops mer pd.

Ban's labor, sow which 1000 1004 1004

Ban's labor, sow which 1000 1004

Ban's labor, sow which 1000 1004

Ban's labor are such of 100 100 100

Ban's labor, sow inch of 100 100 100

Ban's labor, all once pre-band first

Extent, efficient labor 1000 1000 1000

Extent, efficient labor 1000 1000

Extent, first habiteristic VACKEY AIRCRAFT CO. CHECKERBOARD FLYING FIELD

ONE TORS THAT WILL STAND UP UNDER

July 13, 1935

sories, less than one-third regular price. Only few laft. One continuer test writes to "Nest unity perfectly extended but Assembly were wanted an Liberty motors. Box 587, AVI-H.P. Niceport 25 Cl (Spect) 8180 90 Eastly to fb., or will

ready to fig. Bell about for quick cole. V. A. Brekavi, Seetin, S.D. S. N. Y. TOTAL EALE: Away remarkets in recoil condition. Set we FOR SALE: Our brand new Certico bengali with 44 or

INDEX TO ADVERTISERS

Alpendt Serves Desetory. 52 - 53 Chargies Sport May Co..... Careful Abustang Decater Aircraft Co...... Honelton Ages Mile Co. Hulofts Mir. Co.

Lamble, Viablicometic Louise Accountied Expressing Chapts . Ladactes Echiliston Co. Inc. Lagger & Swith Nartis, Gless L. Co. The.

Wright Association Corp. 32

Tips A Builting and a second s Thomas has 50 Where in Ply and the second second second second

Oueer Cargoes Johnson Medar Products Co. ON the floor of the Gless L. Martin Plant there stands a small fiver which attracts very little attention among the hinner and more properful Bumbura. The received it comes in from a flight it is immerted travelers, referred and red is perfect condition for instant emergency.

Its cargoes are unique-a hig manufacturer unbleely finds hannelf short on a certain shicenest of bolts or stampings, or neech north for a broken air comprosercan we bring a supply at once from a city 500 miles away? - we can, and do.

Chicago's greatest newspaper wants a relativesant in a tearing harry :-- cut care the little plane, with a smale slip of card-For more than a year this little Martin

Plane has majeraized as unblembled record for service. Speedy Reliableand as safe as a church.

THE GLENN L. MARTIN COMPANY CLEVELAND OHIO

Rubbers of Quality discrett sleep 1989

"The Luxuries of One Generation become the Necessities of the Next"



In this age of rapid scientific development, the line between luxuries and necessities is so finely drawn, that anything which tends towards progress and advancement is soon adopted as necessary, even sooner than the old adage would have it.

In the humble field of aeroplane propeller construction, the above holds true, and the metal propeller in the remarkably short period of four years has become a real necessity. Certainly no manufacturer can afford to turn out any commercial machines without careful consideration of this wonderful new invention, and even commercial operators should give it serious thought because of added safety, durability, increased performance and pay load.

Mr. Leslie L. Irving of the Irving Airchute Company, Buffalo, N. Y., writes:

"Having flown my Swallow for about twenty-five hours with a new Curtiss-Reed metal propeller, I would like to say that I am entirely pleased with the results. I believe that it has increased the climb at least 20% and greatly helped on the take-off."

Mr. W. A. Yackey, of the Yackey Aircraft Company, Chicago, advises:

"The last metal propeller you sent is sure a wonder. It performs excellently. You can give us as a reference any time for your Reed propeller on any job we have ever used them on."

8

CURTISS AEROPLANE & MOTOR COMPANY, INC. GARDEN CITY, N. Y.

Manufacturers of Curtiss Reed Duralumin Propellers for All Types of Aeroplanes

